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## HOUSEHOLD HYGIENE

By ISABEL McISAAC

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### III

#### VENTILATION AND HEATING

THE ventilation and heating of all buildings are very closely related and must be arranged to work in harmony, otherwise there may be too much ventilation for the amount of heat, or, what is more common, too much heat for the ventilation.

In choosing apartments in large buildings one should always inquire into the system of ventilation and heating, it being taken for granted that the inquirer will have an intelligent idea of what good ventilation really is. Also in choosing and planning a house the same consideration should be given to both subjects. It seems contradictory to say that the better a house is built the worse is its natural ventilation; but such is a fact, for a poorly constructed house will have pervious walls and floors with many cracks and crevices which afford good opportunities for the interchange of inside and outside air, but which will greatly enhance the cost of heating. Such construction is very undesirable from the standpoint of comfort and economy.

The common method of artificial ventilation in dwellings is by placing ventilating flues for pure and impure air in the walls with inlets and outlets for the various rooms. These flues or shafts, as they are often called, must be placed according to the heating system, while it should be borne in mind that the movement of air is entirely in accordance with natural laws, and that to label a shaft, "For foul air," does not mean that the bad air will obediently rise in it. Ventilating flues like chimneys must be constructed with due regard for the winds or their object will be entirely defeated.

Nearly all public libraries contain reference books upon the subjects which are valuable to all prospective house builders. Carpenter's "Heating and Ventilation of Houses" is excellent.

In most instances the woman of the household is obliged to endure whatever system she finds in the already built house or apartment, although the daily management is usually her province, and no matter how faulty the arrangement is she is expected to furnish her family with good air and a comfortable temperature.

If there has ever been a single engineer or janitor of an apartment house who did not find fault with the women of every household for "heating all out-doors" he must have died or emigrated, for no record of him has ever been found. To the credit of the housekeepers it can be said that the living rooms are more comfortable and far better ventilated than the corridors. The suffocating heat and thick air of elevator shafts and halls is unspeakable, and it is small wonder that so many of the children look like sickly plants grown in the dark. The effect of overheating and bad air upon the human plant is the same, taking away our resistance and leaving us a prey to the first infectious material which comes our way.

In houses which contain no system of artificial ventilation a regular time for airing the house daily should be established.

Except when dressing, *bedroom windows should stand open the whole twenty-four hours for three hundred and sixty-five days in the year*; to sleep with closed windows ought to be made a legal offense. The writer is aware that many readers will vehemently dispute the foregoing sentence, but after twenty-five years' experience in and out of hospitals, she declines to retract one word of it.

During the cold season particular attention should be given to the airing of bedding, clothing, rugs, cushions, and heavy curtains; a few minutes of open windows in the morning is not enough to remove the impurities of respiration and dust which find lodgment upon them; but the combination of a clothes-line, a bright sun, and a high wind for an hour or two will freshen them and the room to which they belong.

Children's school clothing needs more airing than a few minutes on the back of a chair near the window, and should be put out on the clothes-line all day on Saturdays and holidays.

The steam and odors from cooking are alike an offense in apartments and houses and may be more easily removed if the rooms are thoroughly aired while the cooking is going on and directly after; for if left to permeate curtains, rugs, and clothing the odor will cling to them for days. In all systems of ventilation a keen sense of smell is a most valuable adjunct.

Especial attention should be given to the air of cellars and basements; the warmer air of the upper floors causes the colder air of the cellar to be drawn through—aspirated—floors and crevices into the living rooms, and if the cellar is not supplied with good air the soil air and other impurities must be present in the upper rooms. "Sewer gas" is a convenient scapegoat in many households to excuse foul air and illness, but it is well to remember that if drains are supplied with traps which

have not lost their seal, there is no way for sewer air to find its way into a house except under very extraordinary circumstances: and that the so-called "sewer gas" probably arises from filthy drains and water closets, dirt easily removable with soap, water, and diligence.

The choice of a heating system for moderate sized dwellings seems to lie with the hot water system. The cost of installation is greater for hot water than steam but the cost of maintenance is less.

The hot-air furnace of good make is also satisfactory, but there are two points to be insisted upon in its use: (1) that the opening for the fresh air flue should be at least six or eight feet above the ground level and should never be allowed in the cellar or basement; (2) that the furnace should be placed nearer the colder side of the house because hot air will carry but a very short distance against currents of cold air.

(To be continued)

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## LUMBAR PUNCTURE

By HAZEL SOUTHARD

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A LUMBAR puncture is done for two principal reasons: as a diagnostic measure, and as a therapeutic measure to relieve pressure in the spinal canal caused by an excess of fluid such as is present in all forms of meningitis, hydrocephalus, hemorrhage into the spinal canal, etc. Where there is an excess of fluid, great relief is often afforded the patient.

As a diagnostic measure it is very valuable as, for instance, in the epidemic form of cerebrospinal meningitis the specific organisms may be found. The method, if properly done, is a safe one. The patient is placed on his side close to the edge of the bed, the shoulders are bent towards the knees and the knee drawn up toward the chest as far as possible. In this way the laminae of the vertebræ are separated and allow a larger space for the entrance of the needle. Pillows, placed under the shoulders and thereby raising them, sometimes help. It is advisable to cocaine the parts before the insertion of the needle and, if the patient is at all hard to manage, a general anæsthetic may be given.

Thoroughly scrub over the lumbar vertebræ and for quite a space around with green soap and sterile water, using sterile gauze. This is followed with ether, alcohol, and bichloride solution. Sterile towels are placed around, making a sterile field, and the operator, after scrubbing his hands, wears sterile gloves. The space between the fourth and fifth